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April 19*th*.

Vice-President **Bridges** in the Chair.

A letter was read from the Secretary of the New York Lyceum of Natural History, dated April 12th, 1853, acknowledging the receipt of the Proceedings of the Academy, vol. 6, No. 7.

Dr. Wetherill exhibited an improved apparatus for the analysis of the Carbonates, on the plan of Wills.

Dr. Meigs, referring to his former communication to the Academy upon the structure of the uterus of the Porpoise, remarked that since that time, until recently, he had been unable to obtain a second specimen. On last Saturday he received from Capt. Bennett, of the steamer Osprey, a fine specimen, about six feet long, of Delphinus delphis, which he had dissected. The uterus, in this specimen, was not, as in the former, gravid; the cervix was more fusiform, but still the peculiar double arrangement, noticed in the first specimen, was well marked. Dr. Meigs remarked that it was an interesting question, whether the cervix uteri of all plunging animals is similarly formed, and referred to the suggestion in his former paper, of the use of the double cervix in resisting the pressure of the sea at great depths, which pressure upon the body and fundus would tend to produce abortion.

April 26*th*.

Mr. Ord, President, in the Chair.

The Committee on Mr. Conrad's paper, describing new species of Unio, reported in favor of publication in the Journal.

The Committee on Mr. Conrad's "Monograph of the genus Fulgur," reported in favor of publication in the Proceedings.

Monograph of the genus Fulgur.

By T. A. Conrad.

FULGUR *Montfort.*

Pyrula *Lam.*

Shell pyriform; spire short; varices none; body whorl very large; aperture large, oval, extended towards the base into an elongate-conic, open canal, entire at base: umbilicus none; epidermis deciduous; labium concave, with a single fold or oblique groove near the origin of the canal, and a slight calcareous deposition above; labrum simple, many of the species having elevated striæ which do not revolve far within the shell, nor do they reach the edge of the labrum, but leave a smooth border; operculum horny.

Remarks.—The striæ on the interior of the labrum are given by Say and Montfort in the generic character of *Fulgur*; but Say does not allude to them in his description of *F. pyruloides*, which, I believe, never has them. This is the case with a few other species, agreeing in every other respect, generically, with the undoubted species.

This genus is usually confounded with *Melongena*, *Rapana* and others, but the group is very distinct, and the animal widely different from its congeners, though it does not appear to have been figured or described. Living specimens are abundant on the coast of New Jersey, and could easily be obtained, whilst an anatomical description of the animal is still a desideratum. The manner in which the young are excluded in spiral series of cells, was noticed and figured by Lister. This peculiarity is common to *F. canaliculatum* and *F. perversum*, and is doubtless persistent throughout the group.

The earliest fossil that I can recognize among American species is *Fulgur trabeatum, Con.*, from the Older Eocene of Alabama. The Lower Tertiary species are comparatively small, whilst in the Miocene and later deposits they are far larger and more numerous, and very characteristic of those Tertiary divisions.

Fossil Species.

EOCENE.

1. FULGUR TRABEATUM. Subfusiform, thin, ventricose, with elevated revolving striæ at base and more obscure ones above; body whorl, with two distinct series of compressed tubercles: the humoral series continued on the spire; whorls angular; beak produced, slightly sinuous; aperture patulous.

Fusus trabeatus, Con. Foss. Shells of Tert. Form, 2d ed. p. 53, t. 18, fig. 1. August, 1833. 1st ed. p. 29, No 3.

F. bicarinatus, Lea. Cont. p. 146, pl. v., fig. 147. Oct., 1833.

Locality.—Claiborne. Ala. Older Eocene.

2. F. SPINIGERUM.

Fusus spiniger, Con. Proceed. A. N. S. 1847, Journ. A. N. S. vol. 1, 2d series, p. 117, pl. xi., fig. 32.

Locality.—Vicksburg, Miss. Newer Eocene.

3. F. NODULATUM. Pyriform, thick, with strong rugose, revolving lines, with a very fine intermediate line between most of the large striæ; on the inferior part of the body whorl is a space without lines, below which the whorl has a slightly concave slope towards the beak; angle tuberculated, the series continued on the spire near the suture; in some specimens the tubercles margin both sides of the suture; spire short; sides of volutions concave; labrum with rather distant, prominent, acute lines within; beak straight.

F. nodulatum, Con. Journ. A. N. S., vol. 1, 2d series, p. 207 and vol. ii. p. 41, pl. 1, fig. 6, 7.

Locality.—Vicksburg, Miss. Newer Eocene.

MIOCENE.

4. F. CORONATUM. Fusiform, ventricose, with fine, closely-arranged, revolving, wrinkled lines; spire short; whorls flattened above, and having elevated, compressed tubercles or short spires on the angle, which is somewhat carinated; suture channelled and margined by an obtuse carinated line.

F. coronatus, Con. Miocene Shells, cover of No. 2, 1839.

F. canaliculatus, Lyell (not *Lin.*) Manual, p. 172, fig. 151.

Locality.—St. Mary's Co., Maryland.

This fine species is very distinct from the recent *canaliculatum*, being less ventricose and having prominent tubercles in all stages of growth. It is abundant. The largest specimen measures six inches in length.

5. F. CANALICULATUM. This recent species has been found in a fossil state, but is rare. It agrees perfectly in form and character with the living shell.

Localities.—St. Mary's river, Md. Natural Well, Duplin Co., N. C.

6. F. RUGOSUM. Pyriform, with numerous, rather coarse revolving lines, disposed to alternate in size, and very distinct lines of growth; whorls scalariform, with a tuberculated carina, the margin of which presents a waved outline, the tubercles being obtuse; spire prominent, profoundly channelled at the suture; margin of the channel carinated in young shells. Length 3 inches.

F. rugosus, Con. Proceed. A. N. S. vol. 1, p. 307.

Compared with *F. coronatum*, this species, when adult, is comparatively shorter an more inflated, with a shorter spire, much coarser revolving lines, which, with the more numerous, more obtuse tubercles, give the shell a very different appearance from *F. coronatum*.

Locality.—St. Mary's river, Maryland.

7. F. TUBERCULATUM. Fusiform, with revolving striæ; spire elevated; angle of the whorl carinated and crowned with prominent tubercles; body whorl ventricose.

F. tuberculatus, Con. Miocene Shells, cover of No. 2, 1839.
Locality.—Patuxent river, St. Mary's Co. Maryland.

Allied to *F. fusiformis*, but is more ventricose, proportionally shorter. It may readily be distinguished by the carina of the volutions, which is very strongly marked towards the apex.

8. FULGUR CARICA. (*Pyrula carica* Lam.)
Locality.—North Carolina. Prof. E. Mitchell.

A large specimen of the variety with short spines, is in the collection of the Academy of Natural Sciences.

9. F. FUSIFORME. Fusiform, with revolving striæ; obsolete, except on the inferior half of the body whorl, where they are prominent, wrinkled and alternated in size; spire elevated; whorls with obtuse little prominent tubercles on the angle which is situated near the suture and is obtuse.
F. fusiformis, Con. Miocene Shells, cover of No. 2, 1839.
Locality.—Patuxent river, St. Mary's Co., Maryland.

10. F. MAXIMUM. Pyriform, ventricose, moderately thick, with coarse distant subimbricated lines of growth; spire short, with revolving striæ; whorls concave above, rounded inferiorly; beak long and sinuous; columella very concave; aperture patulous. Length 7½ inches.
F. maximus, Con., Miocene Shells, cover of No. 2, 1839.
Locality. Yorktown, Virginia.

There is a variety of this shell thick and ponderous; angle of penultimate and body whorls with short distant arched or foliated spines, each of which is connected with a longitudinal line or fold; lines most prominent towards the base where the beak is somewhat tumid.

This is the largest fossil species known to me, and resembles *F. aruanum*, but the rounded volutions of the spire is a striking point of difference.

11. F. INCILE. Fusiform, with distant coarse, prominent and fine impressed revolving lines; body whorl profoundly ventricose, shoulder rounded, summit with a broad concave furrow margined by a profound carinated line, between which and the suture is a wide profound channel; spire conical, elevated, whorls ventricose; aperture dilated. Length 6½ inches.
F. incilis, Con., Sillim. Journ. vol. xxiii. p. 343.
Locality. Yorktown, Virginia.

This large species distantly resembles *F. canaliculatum*. It is much thicker and more ponderous, with a more elevated spire, and with rounded volutions destitute of tubercles.

12. F. CONTRARIUM. Pyriform, sinistral, with wrinkled revolving lines, obsolete on the middle of the large whorl; shoulder obtusely angulated, without tubercles; summit of the whorls concave; whorls of the spire angulated in the middle, and slightly tuberculated on the angle; beak very long, sinuous; labrum with distant prominent lines within.
F. contrarius, Con., Silliman's Journ. vol. xxxix. p. 387.
Locality. Natural Well, Duplin Co., N. C.

A much smaller species than *F. perversum*, differing in its want of tubercles on the shoulder when adult, (for young shells have small tubercles, not compressed as in the kindred species.) The shell is proportionally thicker, the columella more concave and the angle more prominent.

13. F. EXCAVATUM. Pyriform, with revolving lines, very prominent on the inferior half of the large whorl; shoulder with a wide concave depression; spire widely and profoundly channelled, the whorls bicarinated and slightly tuberculated on the carinæ.
F. excavatus, Con., Sillim. Journ. xxxix. p. 387.
Locality. Natural Well, Duplin Co. N. C.

14. F. OREGONENSE. Fusiform with unequal prominent revolving lines, a few of which are considerably larger than the others, on the upper portion of the body whorl: they are also coarser towards the base, and attenuated in size;

shoulder with a series of tubercles; one of the larger lines on the body whorl somewhat tuberculated; a prominent line margins the suture; spire conical, the volutions reticulated and tuberculated.

Fusus Oregonensis, Con., Sillim. Journ. vol. v. p. 433, fig. 13.

Locality. Columbia river, near Astoria, Oregon. J. K. Townsend.

Recent Species.

F. CARICA, (Murex carica, Gmel.)
Lister, Conch. t. 880.
Martini, iii. t. 67, fig. 744, and t. 69, fig. 756, 757.
Pyrula carica, Lam. Desh. ed. An. sans Vert. ix. p. 505.
Pyrula aruana, Reeve, (not Linn.) Conch. Icon. pl. 5, fig. 16.

This species inhabits the Atlantic coast from Georgia to Massachusetts. Reeve, when he published his monograph of Pyrula, in 1847, was unacquainted with the habitat of this common and long known shell. There is a distinct variety of this species on the southern coast, with much shorter and thinner spines, and it is also longer and thinner than the typical form.

F. CANALICULATUM. (*Pyrula*, Lam.)
Buccinum ampullaceum, Lister, Conch. t. 878, fig. 2.
Murex canaliculatus, Linn. Martini, iii. p. 29, t. 67, fig. 742, 743.
Pyrula canaliculata, Reeve, Conch. Icon. pl. 8, fig. 26.

Inhabits the coasts of New Jersey, Rhode Island and Massachusetts.

F. PERVERSUM. (*Murex*, Linn.)
Buccinum ampullaceis ad sinistram convolutis, Lister, Conch., t. 907, 908.
Chemnitz, ix. part 1, p. 67, t. 106, fig. 900 to 903.
Pyrula perversa, Lam. Reeve, Conch. Icon. pl. 3, fig. 13.

Inhabits the southern coast. In Tampa Bay, Florida, it is abundant, and living specimens may be obtained 12 inches in length.

F. PYRUM. (*Bulla pyrum*, Dillwyn, 1817.)
Buccinis ampullaceis tenuibus, Lister, Conch. t. 877.
Martini, iii. p. 27, t. 66, fig. 736, 737.
Bulla ficus, var. *b*. Gmel. Dillwyn's Catalogue, p. 485.
Pyrula spirata, Lam., 1822, An. sans Vert. vii. p. 142.
Fulgur pyruloides, Say, 1822, Amer. Conch. pl. 19.
Pyrula spirata, Reeve, Conch. Icon. pl. 8, fig. 27.

Common on the southern coast of Florida.

F. CANDELABRUM. (*Pyrula*, Lam.)
Kiener, pl. 8, fig. 2.

Kiener and Reeve suggest that this shell is a variety of *Fulgur perversum*. It does not appear that more than one specimen has been discovered.

F. GIBBOSUM. Pyriform, ventricose, thick, armed with broad prominent foliated thick spines; shoulder carinated; spire short, the four upper whorls tuberculated on the upper margin of the suture; columella sinuous; middle of the beak profoundly tumid, on which elevation are robust alternated wrinkled striæ; labrum channelled below, corresponding to the external hump; margin of labrum very sinuous towards the base, the interior with slightly raised lines, and of a yellowish orange color; color white, with long purplish lines and a broad indistinct revolving white band on the body whorl.

Pyrula perversa, var. Kiener, pl. 9, fig. 2.

The revolving lines are obsolete on the upper part of the body whorl, and there are revolving wrinkled slightly raised lines on the spire.

A specimen of this species is in the collection of the Academy, and Kiener's figure has a close resemblance to it. It is not known to inhabit the coast of the United States, and is probably from Campeachy Bay.

This shell is not a variety of *F. perversum*, as Kiener supposes, but if not a distinct species, must be a sinistral variety of *F. carica*. That shell, however, is common on the coast of the United States, but a sinistral specimen is there unknown.

Notes on Shells.

By T. A. CONRAD.

DREISSENA, *Van Beneden.*

There is but one species of this genus known to inhabit the waters of North America. It is a small shell, very abundant in Virginia, attached by its byssus to the *Ostrea virginiana*. I described it in the Journal of the Academy of Natural Sciences, vol. vi. p. 263, pl. 11, fig. 13, under the name of *Mytilus leucophæatus.*

ARTEMIS, *Poli.*

There are three species of this genus on the Atlantic coast of the United States, one of which occurs fossil in the Miocene of Virginia, (*A. concentrica.*) As they do not appear to be correctly named in Reeve's monograph, the following corrections are submitted:

1. A. CONCENTRICA.
A. acetabulum, Con., Miocene Shells, p. 29, pl. 16, fig. 1.
Gualt. t. 76, fig. F.
Favanne, t. 48, fig. 3.
Venus concentrica, Born. t. 5, fig. 5.
Inhabits the coast of Florida.

2. A. ELEGANS, *Con.*, Miocene Shells, p. 67, pl. 38, fig. 1.
Encyc. Method. t. 279, fig. 2.
Lister, t. 288.
Chemn. vii. pl. 37, fig. 392.
A. concentrica, Reeve, (not Born) Conch. Icon. pl. 11, fig. 8.
Inhabits the southern coast of Florida. Common in Tampa Bay. Fossil in Post-Pliocene on the Neuse river, North Carolina.

3. A. DISCUS, Reeve, Conch. Icon. pl. 11, fig. 9.
Cytherea concentrica, Chenu, (not Born,) pl. 10, fig. 5.
Inhabits the coasts of the Middle and Southern States. It has been found as far north as Cape May, and is common in Tampa Bay, Florida.

Fossil Species.

A. LENTICULARIS.
Cytherea lenticularis, Rodgers, Trans. Amer. Philos. Soc., 2d series, vi., p. 372, pl. 28, fig. 1.
Locality. Eastern Virginia, in the Eocene.

A. EXCAVATA.
Cytherea excavata, Morton, Cretaceous Group of the United States, p. 67, pl. 5, fig. 1.
Locality. Arneytown, N. J., in cretaceous green sand.

ACANTHINA, *Fischer.*

MONOCEROS, *Lam.*

This genus, very nearly connected with *Purpura,* does not abound in species either recent or fossil. It makes its first appearance in the Eocene, and I have not met with it anywhere in this country, except in the older Eocene of Alabama. Three species referred to Buccinum by Deshayes in his Coq. Foss. viz. *obtusum, semicostatum* and *patulum,* must either be arranged in the present genus or in Sowerby's genus *Gastridium,* which does not materially differ from *Acanthina,* the only variation consisting in its small or obsolete tooth. In the Claiborne species the tooth, though small, is never obsolete in perfect specimens.

Sub-Genus GASTRIDIUM, *Sowerby.*

A. vetusta, *Con.*
Monoceros vetustus, Con., Foss. Shells, p. 37, pl. 15, fig. 3.
M. pyruloides, Lea, Contributions, p. 161, pl. 5, fig. 166.
M. fusiformis, ib. ib. p. 162, pl. 5, fig. 167.

Cornulina, *Con.*

Shell short-fusiform, spinous; columella rounded; labrum with three teeth, two of them very small.

This genus embraces three Eocene species, which differ from Monoceros in having a rounded columella and three teeth on the labrum.

1. C. minax.

Murex minax, Brander, Desh. Coq. Foss. pl. 77, fig. 1, 2.

2. C. armigera, *Con.*

Short-fusiform, ventricose, ponderous, with two remote series of distant, prominent thick spines, the one on the shoulder, the other below, commencing near the columella and rather below the middle of the large volution; base carinated; labrum with a short conical tooth and two small teeth situated below it.

Monoceros armigerus, Con., Foss. Shells of Tert. Form. p. 37, pl. 15, fig. 1, Oct. 1833; Bronn. Index Pal. p. 471.

Melongena armigera, Con., Foss. Shells, 1st ed. Aug. 1833.

Fusus Taitii, Lea, Cont. to Geol. p. 152, pl. 5, fig. 159, Dec. 1833.

Locality. Claiborne, Alabama. Not uncommon.

The labrum of this shell is generally broken, but when entire, it shows two very small teeth in addition to the one situated at the termination of the revolving groove.

3. C. crassicornuta, *Con.*

Melongena crassicornuta, Con., Jour. Acad. Nat. Sc. 2d series, pl. 11, fig. 31.

The labrum of the only specimen found is broken, but the shell so nearly resembles *C. minax,* that it is confidently arranged in the same genus.

On motion of Dr. Elwyn, it was *Resolved,* that the Secretary be directed to call a special meeting of the Academy, on Tuesday evening next, for the purpose of considering the expediency of erecting a new Hall.

Mr. Vaux presented the following Report:

The Committee appointed to procure funds for the purchase of the Anatomical collection belonging to the estate of the late Dr. Samuel George Morton, and now in the Museum of the Academy, report that they have procured the sum of $4000, which is the price agreed for, and they at the same time submit the following list of names, being those of gentlemen, to whose liberality the Academy is indebted for the advantage of possessing the collection in question in its own right.

(Signed) Wm. S. Vaux,
Charles D. Meigs,
John Cooke.

Subscribers to Dr. Morton's Anatomical Collection.

Charles Henry Fisher, Thomas Biddle, Henry J. Williams, Charles D. Meigs, Thomas T. Lea, John Farnum, John A. Brown, William Welsh, Richard Price, Morris L. Hallowell, Joseph D. Brown, William Platt, Joseph Swift, Singleton A. Mercer, A. J. Lewis, George W. Carpenter, George B. Wood, J. Francis Fisher, David S. Brown, John B. Meyers, Lewis R. Ashhurst, Caleb Cope, Richard D. Wood, Samuel V. Merrick, James Dundas, J. Pemberton Hutchinson, Henry Pepper, John Cooke, John Lambert, Robert Pearsall, Joseph S. Lovering,

J. G. Fell, Caspar W. Pennock, John Grigg, Joseph Jeanes, Thomas P. Remington, John Price Wetherill, Henry Seybert, (each of the above $100.) Thomas McEwen, Robert Swift, Jacob G. Morris, Wm. S. Vaux, (each $50.)

On motion, the Committee was authorized to receive the amount subscribed, and to consummate the purchase.

ELECTION.

Prof. John C. Cresson, Wm. Byrd Page, M. D., Edmund Lang, M. D., Wm. Hembel Taggart, M. D., all of Philadelphia, and Dr. Charles C. Benton, of Antwerp, N. Y., were elected *Members* of the Academy.